REMARKS

Claims 1-71 are pending in the above-captioned patent application after this amendment. Claims 11 and 60 have been objected to because of certain informalities. Claims 1-71 have been rejected.

The Applicants respectfully disagree with the rejection of claims 1-71. However, the Applicants have amended claims 6, 7, 11, 12, 13, 14, 18, 22, 27, 34, 37, 38, 39, 46, 47, 51, 54, 56, 60, 63, and 67 for the purpose of expediting the patent application process in a manner consistent with the goals of the Patent Office pursuant to 65 Fed. Reg. 54603 (September 8, 2000), and/or to clarify what the Applicants regard as the present invention. Claims 6, 7, 11, 12, 13, 14, 18, 22, 27, 34, 37, 38, 39, 46, 47, 51, 54, 56, 60, 63, and 67 have been amended to correct certain informalities and not to overcome any specific prior art based rejections.

Support for the amendments to the claims can be found throughout the originally filed specification. In particular, support for the amendments to the claims can be found in the specification at page 17, lines 18-19, at page 19, line 17 through page 20, line 2, at page 21, lines 4-10, at page 21, line 29 through page 22, line 15, and in Figures 3, 4A and 4B.

No new matter is believed to have been added by this amendment.

Reconsideration of the pending application is respectfully requested in view of the above-recited amendments and the arguments set forth below.

Objection To The Claims

Claims 11 and 60 are objected to as containing certain informalities. In particular, the Patent Office objects to claim 11 because the dependency of the claim can not be determined, and objects to claim 60 due to a typographical error. In view of these objections, the Applicants have amended claim 11 to show its proper dependency from claim 10, and the Applicants have amended claim 60 according to the suggestion of the Patent Office. Claims 11 and 60 have been further amended to correct an additional informalities. Accordingly, the objections to claims 11 and 60 are believed to be overcome.

Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 6, 7, 12, 14, 15, 22, 27, 28, 32-50, 54, 63, 67 and 68 have been rejected under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention.

In particular, the Patent Office states that as to claims 6, 14, 22, 27, 34, 44, 54, 63 and 67, the function of the control system is vague and indefinite as it is not clearly understood how the control system that is to receive the positional signals from the measurement system can also adjust the second X position signal. The Applicants respectfully disagree with the rejection of claims 6, 14, 22, 27, 34, 44, 54, 63 and 67 under 35 U.S.C. §112, second paragraph. However, claims 6, 14, 22, 27, 54, 63, and 67 have been amended to clarify what the Applicants regard as the present invention. These claims provide that one function of the control system is to receive the position

signals from the measurement system and another function of the control system is to offset one of the signals to approximately match the other position signal. It is possible for the control system to both receive a position signal and then, after receiving the position signal, to offset it.

Claims 34 and 44 do not contain the language rejected as being ambiguous by the Patent Office. Accordingly, the Applicants respectfully submit that claims 6, 14, 22, 27, 34, 44, 54, 63 and 67 are patentable under 35 U.S.C. §112, second paragraph.

Further, with respect to claim 12, the Patent Office states that the reference to "the switch" is not clearly understood because there are a number of switching operations. In view of this rejection, the Applicants have amended claim 12 to provide that the switch referred to in the claim is the switch from the first Y system to the third Y system. Accordingly, the Applicants respectfully submit that the basis for rejection under 35 U.S.C. §112, second paragraph with respect to claim 12 has been overcome. Therefore, claim 12 is patentable under 35 U.S.C. §112, second paragraph.

Still further, with respect to claim 32, the Patent Office states that the recitation of "wherein the control system does not direct current to the X mover during at least one servo cycle when the device table is in the transition region" is indefinite because the recitation that an element does not perform a function does not constitute a limitation in any patentable sense. The Applicants respectfully disagree with the rejection of claim 32 under 35 U.S.C. §112, second paragraph. Claim 32 recites that the control system directs current to the X mover generally, but does not direct current to the X mover during a particular period, i.e. "during at least one servo cycle when the device table is in the transition region," which further limits when the control system performs its

function of directing current to the X mover. The MPEP further states that "(s)o long as the boundaries of the patent protection sought are set forth definitely, albeit negatively, the claim complies with the requirements of 35 U.S.C. 112, second paragraph." (See MPEP 2173.05(i)).

Accordingly, the Applicants respectfully submit that claim 32 is patentable under 35 U.S.C. §112, second paragraph. Because rejected claims 33, 35-37, 40-43 and 45-50 depend either directly or indirectly from claim 32, they are also considered to be patentable.

Additionally, with respect to claim 38, the Patent Office states that the claim is indefinite because it is unclear whether the limitations in the square bracket are part of the claimed invention. In view of this rejection, the Applicants have amended claim 38 to remove what was inside the brackets as it is not part of the claimed invention. Accordingly, the Applicants respectfully submit that the basis for rejection under 35 U.S.C. §112, second paragraph with respect to claim 38 has been overcome. Therefore, claim 38 is patentable under 35 U.S.C. §112, second paragraph.

Yet further, with respect to claim 39, the Patent Office states that the recitation of "the history points" is not clearly understood as it lacks proper antecedent basis. In view of this rejection, the Applicants have amended claim 39 to more effectively demonstrate that the control system flushes "previous X position signals from the X systems within one servo cycle." Accordingly, the Applicants respectfully submit that the basis for rejection under 35 U.S.C. §112, second paragraph with respect to claim 39 has been overcome. Therefore, claim 39 is patentable under 35 U.S.C. §112, second paragraph.

In summary, the Applicants respectfully assert that all bases for rejecting claims 6, 7, 12, 14, 15, 22, 27, 28, 32-50, 54, 63, 67 and 68 under 35 U.S.C. §112, second paragraph, have been overcome.

Rejections Under 35 U.S.C. § 103(a)

Claims 1-8, 16-18, 32-40, 48-50 and 60-64

Claims 1-8, 16-18, 32-40, 48-50 and 60-64 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,323,935 issued to Ebihara et al. ("Ebihara et al."). The Applicants respectfully traverse the §103 rejection of claims 1-8, 16-18, 32-40, 48-50 and 60-64. Ebihara et al. is believed to qualify as prior art under 35 U.S.C. §102(e). 35 U.S.C. §103(c) provides as follows:

"(c) Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person." 35 U.S.C. §103(c). (Emphasis added).

Evidence to Establish Common Ownership

The claimed invention included in the present application and Ebihara et al. were, at the time the invention in the present application was made, owned by and/or subject to

an assignment to Nikon Corporation. Thus, Ebihara et al. shall not preclude patentability under 35 U.S.C. §103(a). (See MPEP 706.02(l)(2)).

Because sufficient evidence has been provided to establish "common ownership" of the present invention and Ebihara et al., the rejection of claims 1-8, 16-18, 32-40, 48-50 and 60-64 under 35 U.S.C. §103(a) has been overcome and should be withdrawn. Accordingly, claims 1-8, 16-18, 32-40, 48-50 and 60-64 are believed to be allowable.

Claims 9-15, 19-30, 41-47, 51-59 and 65-71

Claims 9-15, 19-30, 41-47, 51-59 and 65-71 are rejected under 35 U.S.C. §103(a) as being unpatentable over Ebihara et al. in view of Makinouchi et al., U.S. Patent No. 6,259,511 ("Makinouchi et al."). The Applicants respectfully traverse the §103 rejection of claims 9-15, 19-30, 41-47, 51-59 and 65-71, based on 35 U.S.C. §103(c), as cited above. Ebihara et al., as noted above, shall not preclude patentability under 35 U.S.C. §103(a). Accordingly, claims 9-15, 19-30, 41-47, 51-59 and 65-71 are believed to be allowable.

Version with markings to show changes made:

In the Claims:

Claims 6, 7, 11, 12, 13, 14, 18, 22, 27, 34, 38, 39, 44, 46, 51, 54, 60, 63, and 67 have been amended as follows:

6. (First Amended) The stage assembly of claim 1 wherein the control system [adjusts] offsets the second X position signal to [be] approximately [equal to] match the first X position signal.

7. (First Amended) The stage assembly of claim 1 wherein the control system [adjusts] offsets the second X position signal to [be] approximately [equal to] match the first X position signal within one servo cycle.

11. (First Amended) The stage assembly of claim [11] 10 wherein the control system directs current to the Y mover so that the device table is moving at an approximately constant velocity along the Y axis before and after the switching between the first Y system and the third Y system.

12. (First Amended) The stage assembly of claim 10 wherein the control system utilizes the first Y position signal from the first Y system to control the Y mover prior to the switch from the first Y system to the third Y system and the control system utilizes the third Y position signal from the third Y system to control the Y mover after the switch from the first Y system to the third Y system.

13. (First Amended) The stage assembly of claim 12 wherein the control system switches from the third Y system to the second Y system in the second region and the control system utilizes the third Y position signal from the third Y system to control the Y mover prior to the switch from the third Y system to the second Y system and the control system utilizes the second Y position signal from the second Y system to control the Y mover after the switch from the third Y system to the second Y system.

14. (First Amended) The stage assembly of claim 10 wherein the control system [adjusts] offsets the third Y position signal to [be] approximately [equal to] match the first Y position signal within one servo cycle.

18. (First Amended) A wafer on which an image has been formed by the exposure apparatus of claim [17] 16.

22. (First Amended) The stage assembly of claim 19 wherein the control system [adjusts] offsets the second X position signal to [be] approximately [equal to] match the first X position signal within one servo cycle.

27. (First Amended) The stage assembly of claim 25 wherein the control system [adjusts] offsets the second Y position signal to [be] approximately [equal to] match the third Y position signal within one servo cycle.

34. (First Amended) The stage assembly of claim 32 wherein the control system directs current to the X mover so that the device table is moving at an approximately constant velocity along the X axis immediately prior to the at least one skipped servo cycle.

37. (First Amended) The stage assembly of claim 32 wherein the control system [adjusts] offsets the second X position signal to [be] approximately [equal to] match the first X position signal.

38. (First Amended) The stage assembly of claim 32 wherein the control system [adjusts] offsets the second X position signal to [be] approximately [equal to] match the first X position signal [[during the at least one skipped servo cycle.]] within one servo cycle.

39. (First Amended) The stage assembly of claim 32 wherein the control system flushes [the history points] previous X position signals from the X systems within one servo cycle.

46. (First Amended) The stage assembly of claim 42 wherein the control system [adjusts] offsets the third Y position signal to [be] approximately [equal to] match the first Y position signal during one of the skipped servo cycles.

47. (First Amended) The stage assembly of claim 46 wherein the control system [adjusts] offsets the second Y position signal to [be] approximately [equal to] match the third Y position signal during one of the skipped servo cycles.

51. (First Amended) A stage assembly that moves a device along an X axis and a Y axis between a first region, a transition region, and a second region, the stage assembly comprising:

a device table that retains the device;

a Y mover connected to the device table and moving the device table along the Y axis;

a measurement system that monitors the position the device table, the measurement system including a first Y system that provides a first Y position signal that indicates the position of the device table along the Y axis when the device table is in the first region, a second Y system that provides a second Y position signal that indicates the position of the device table along the Y axis when the device table is in second region and a third Y system that provides a third Y position signal when the device table is in the first region, the second region and the transition region; and

a control system connected to the Y mover and the measurement system, the control system receiving the position signals from the Y systems and directs current to the [movers] Y mover to move the device table along the Y axis from the first region to the second region with a plurality of servo cycles, wherein the control system switches from the first Y system to the third Y system within one servo cycle when the device table is in the first region.

54. (First Amended) The stage assembly of claim 53 wherein the control system [adjusts] offsets the third Y position signal to [be] approximately [equal to] match the first Y position signal within one servo cycle.

56. (First Amended) The stage assembly of claim 55 wherein the control system [adjusts] offsets the second Y position signal to [be] approximately [equal to] match the third Y position signal within one servo cycle.

60. (First Amended) A method for making a stage assembly for moving a device along an X axis between a first region, a transition region, and a second region, the method comprising the steps of:

providing a device table that retains the device;

connecting an X mover to the device table, the X mover moving the device table along the X axis;

providing a measurement system, the measurement system including a first X system that provides a first X position signal that indicates the position of the device table along the X axis when the device table is in the first region and a second X system that provides a second X position signal that indicates the position of the device table along the X axis when the device table is in second region; and

connecting a control system [tot] to the X mover and the measurement system, wherein the control system switches between the X systems during one servo cycle when the device table is in the transition region.

63. (First Amended) The method of claim 62, wherein the control system [adjusts] offsets the second X position signal to [be] approximately [equal to] match the first X position signal during switching of X systems.

67. (First Amended) The method of claim 66, wherein the control system [adjusts] offsets the third Y position signal to [be] approximately [equal to] match the first Y position signal during switching between the first Y system [to] and the third Y system.

CONCLUSION

In conclusion, the Applicants respectfully assert that claims 1-71 are patentable for the reasons set forth above, and that the application is now in a condition for allowance. Accordingly, an early notice of allowance is respectfully requested. The Examiner is requested to call the undersigned at 858-456-1951 for any reason that would advance the instant application to issue.

Dated this 7th day of January, 2003.

Respectfully submitted,

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